

$\Xi_c(2645)$ $I(J^P) = \frac{1}{2}(\frac{3}{2}^+)$ Status: ***

A narrow peak seen in the $\Xi_c\pi$ mass spectrum. The natural assignment is that this is the $J^P = 3/2^+$ excitation of the Ξ_c in the same SU(4) multiplet as the $\Delta(1232)$, but the quantum numbers have not been measured.

 $\Xi_c(2645)$ MASSES

The masses are obtained from the mass-difference measurements that follow.

 $\Xi_c(2645)^+$ MASSVALUE (MeV)DOCUMENT ID

2647.4±2.0 OUR NEW UNCHECKED FIT Error includes scale factor of 1.2. [2644.6 ± 2.1 MeV OUR 1998 FIT Scale factor = 1.2]

 $\Xi_c(2645)^0$ MASSVALUE (MeV)DOCUMENT ID

2644.5±1.8 OUR NEW UNCHECKED FIT [2643.8 ± 1.8 MeV OUR 1998 FIT]

 $\Xi_c(2645) - \Xi_c$ MASS DIFFERENCES **$m_{\Xi_c(2645)^+} - m_{\Xi_c^0}$** VALUE (MeV)EVTSDOCUMENT IDTECNCOMMENT

175.6±1.4 OUR NEW UNCHECKED FIT Error includes scale factor of 1.7. [174.3 ± 1.1 MeV OUR 1998 FIT]

175.6±1.4 OUR NEW AVERAGE Error includes scale factor of 1.7. [174.3 ± 1.1 MeV OUR 1998 AVERAGE]

177.1±0.5±1.1	47	FRABETTI	98B E687	γ Be, $\bar{E}_\gamma = 220$ GeV	■
174.3±0.5±1.0	34	GIBBONS	96 CLE2	$e^+ e^- \approx \gamma(4S)$	

 $m_{\Xi_c(2645)^0} - m_{\Xi_c^+}$ VALUE (MeV)EVTSDOCUMENT IDTECNCOMMENT**178.2±1.1 OUR FIT**

178.2±0.5±1.0	55	AVERY	95 CLE2	$e^+ e^- \approx \gamma(4S)$	
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 $\Xi_c(2645)$ WIDTHS **$\Xi_c(2645)^+$ WIDTH**VALUE (MeV)CL%DOCUMENT IDTECNCOMMENT

<3.1	90	GIBBONS	96 CLE2	$e^+ e^- \approx \gamma(4S)$	
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 $\Xi_c(2645)^0$ WIDTHVALUE (MeV)EVTSDOCUMENT IDTECNCOMMENT

<5.5	90	55	AVERY	95 CLE2	$e^+ e^- \approx \gamma(4S)$
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$\Xi_c(2645)$ DECAY MODES

$\Xi_c \pi$ is the only strong decay allowed to a Ξ_c resonance having this mass.

Mode	Fraction (Γ_i/Γ)
$\Gamma_1 \quad \Xi_c^0 \pi^+$	seen
$\Gamma_2 \quad \Xi_c^+ \pi^-$	seen

$\Xi_c(2645)$ REFERENCES

FRAEBETTI	98B	PL B426 403	P.L. Frabetti <i>et al.</i>	(FNAL E687 Collab.)
GIBBONS	96	PRL 77 810	L.K. Gibbons <i>et al.</i>	(CLEO Collab.)
AVERY	95	PRL 75 4364	P. Avery <i>et al.</i>	(CLEO Collab.)